



Environmental
Protection Agency



East Liverpool Air Quality

August 2010

A team of federal and state agencies worked together to learn more about metals in the air in East Liverpool. They also looked into whether these metals might cause health problems. They found high levels of manganese in the air in East Liverpool. They recommend immediate action to reduce the amount of manganese in the air and further study to find out if people's health is being affected.



How did the investigation of air quality in East Liverpool begin?

The Ohio Environmental Protection Agency (Ohio EPA) has been involved in sampling outdoor air in East Liverpool since 1999. In 2008, the Ohio EPA asked the federal Agency for Toxic Substances and Disease Registry (ATSDR) to look at whether levels of metals in air in the East Liverpool community were a health problem for people living in the area.

A multi-agency team worked together to learn how metals in East Liverpool air might affect community health. They also looked for ways to reduce exposure to these metals. Team members included scientists from the

- Ohio Department of Health (ODH)
- Ohio EPA
- ATSDR and
- United States Environmental Protection Agency (U.S. EPA).

This newsletter describes what they found and steps to address this issue.

Why is ATSDR having a meeting in our community?

ATSDR staff members are here to visit your community and gather information from residents about your health concerns. They also want to share our review of metals data collected in your community since the late 1990s and what it tells us about your exposure to metals in the air. This review is presented in greater detail in a document called a "Health Consultation" that you can read on-line or at the Carnegie Public Library of East Liverpool, at 219 E. 4th Street.

A Health Consultation is a review of available information or collection of new data to respond to a specific health question or request for information about a potential environmental hazard. Health consultations are focused on a specific exposure issue. Health Consultations are not the same as a medical exam or community health study. Please consult your family doctor for treatment if you have health problems.



Environmental
Protection Agency



What information did ATSDR review?

Ohio EPA gathers air sampling data from three locations in East Liverpool: the Water Plant site, the Port Authority site, and a site next to the East Elementary School. They analyze the dust from the air, looking at concentrations of arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and zinc.

ATSDR looked at air sample data collected between 1999 and 2009. They also looked at weather data to find out if wind would be a factor to consider.

What did ATSDR find out?

ATSDR concluded that manganese levels in the air over this time period were high enough to be a health hazard. The Water Plant had the highest concentrations of manganese, followed by much lower concentrations at the Port Authority site, and the Maryland Avenue (East Elementary School) site. The weather data indicated that manganese levels were higher during times when the wind blew from the direction of the S.H. Bell State Line facility compared to when it blew from other directions.

We found no elevated levels of the hazardous form of chromium that can cause cancer. Levels of all other metals were normal. Because these metals are not expected to cause health problems, they were not evaluated in this health consultation.

What is manganese?

Manganese is a naturally occurring metal found in rocks and soil. It is also an important dietary nutrient for good health. Manganese is used principally in steel production to improve hardness, stiffness, and strength. It is used in carbon steel, stainless steel, high-temperature steel, and tool steel, along with cast iron and other alloys. The largest source of manganese exposure is food

or manganese-containing nutritional supplements. People who consume foods rich in manganese such as grains, beans and nuts, as well as heavy tea drinkers, may have a higher intake of manganese than other people.

Another source of manganese is from the air you breathe, which generally contains very low levels of manganese. However, people might have higher exposures to manganese in outdoor air if they live near mines or places that make manganese products or handle manganese-containing material for places that make manganese products.

Where can I find a copy of the ATSDR Health Consultation?

If you would like to see copies of the Health Consultation, ATSDR has placed these documents, fact sheets, and other agency materials in the Carnegie Public **Library of East Liverpool**, 219 E. 4th St., East Liverpool, OH 43920. If you have access to the internet, you can view the materials on-line at: **{INSERT WEB ADDRESS}**

What's next?

ATSDR recommends immediate action to reduce the amount of manganese in the air and further study to find out if people's health is being affected. Ohio EPA has worked with S. H. Bell to reduce the amount of manganese that gets into the air from their operations. Ohio EPA recently determined that additional actions are needed. They are requiring S.H. Bell to take additional steps to cut the amount of manganese it emits. If you are interested in reading more about the specific actions Ohio EPA is requiring of S.H. Bell, you can download the February 2010 Director's Findings and Orders at: http://www.epa.ohio.gov/portals/27/enforcement/year_2010/SHBell_020810.pdf



Environmental
Protection Agency



What is Ohio EPA doing to address manganese in outdoor air?

Ohio EPA has identified the S.H. Bell facilities as sources of airborne manganese in the community. S.H. Bell made a number of changes to operations to control manganese emissions at the company's East Liverpool facilities as part of a 2008 agreement with Ohio EPA. Some of these changes included:

- enclosing storage piles and screening operations;
- dust control measures; and
- covering trucks leaving the facilities.

In spite of these changes, manganese levels in the air remained at unacceptable levels after the projects were completed. Ohio EPA determined that S.H. Bell needed to do more to control manganese dust. On February 8, 2010, Ohio EPA issued another set of "findings and orders." These findings and orders will require S.H. Bell to take specific actions, including:

- further actions to control dust;
- stop handling manganese materials at the facility nearest East Elementary School; and
- enclose areas where manganese materials are processed.

Ohio EPA believes that enforcing these steps will significantly reduce airborne manganese concentrations in the community, and reduce the risk of health problems from manganese exposures. Ohio EPA plans to continue its air monitoring program to verify that the changes they are requiring of S.H. Bell reduce manganese exposures in the community.

What are U.S. EPA's activities in our community?

Since November 2000, U.S. EPA has been gathering information about the S.H. Bell facility and evaluating

its compliance with air pollution rules. In 2001, U.S. EPA issued a notice of violation to the company for failing to obtain appropriate permits, failing to conduct timely stack tests, and failing to comply with certain reporting requirements. In 2008, U.S. EPA reached a legally enforceable agreement with S.H. Bell that required the company to reduce particulate matter emissions (which include manganese and chromium compounds) using various emission control methods. These emission control measures were completed by February 2009. Reducing particulate matter emissions from the source lessens the potential impact to the surrounding communities.

U.S. EPA has been learning more about whether outdoor toxic air pollution poses health concerns to school children through its national School Air Toxics (SAT) initiative. East Elementary was one of 63 schools across the country chosen for monitoring.

U.S. EPA has analyzed the data that was collected, including the manganese concentrations and weather data. U.S. EPA's findings of exposure are consistent with those of historical monitoring, and they will support additional monitoring in E. Liverpool to ensure that planned enforcement activities are effective in reducing manganese concentrations in the community. To read the East Liverpool SAT report or review data collected, please go to U.S. EPA's SAT website at:

<http://www.epa.gov/schoolair>

For more information...

Health-related concerns: call ATSDR's Michelle Colledge at (312) 886-1462

Ohio EPA air monitoring and enforcement actions: call Kristopher Weiss, at (614) 644-2160

U.S. EPA school monitoring program: call Jaime Wagner at (312) 886-9402.